

INTERNATIONAL SEARCH REPORT

 Interna Application No
 PCT/IB 03/01787

 A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 F02B37/22 F02B37/013

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal; PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 073 447 A (KAWAGUCHI JUN ET AL) 13 June 2000 (2000-06-13)	1-8
Y	column 2, line 39 - column 4, line 58; figures 2,3	9-15
Y	----- EP 0 840 000 A (ISUZU MOTORS LTD) 6 May 1998 (1998-05-06) abstract; figures	9-15
A	----- PATENT ABSTRACTS OF JAPAN vol. 0100, no. 66 (M-461), 15 March 1986 (1986-03-15) & JP 60 212623 A (HITACHI SEISAKUSHO KK), 24 October 1985 (1985-10-24) abstract	
A	----- US 6 263 672 B1 (MCKINLEY STEVEN R ET AL) 24 July 2001 (2001-07-24) cited in the application	

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

16 January 2004

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6073447	A	13-06-2000	JP 10008977 A	13-01-1998
			DE 19717559 A1	22-01-1998
			FR 2748060 A1	31-10-1997
EP 0840000	A	06-05-1998	JP 10122062 A	12-05-1998
			DE 69704322 D1	26-04-2001
			DE 69704322 T2	05-07-2001
			EP 0840000 A1	06-05-1998
			US 5937834 A	17-08-1999
JP 60212623	A	24-10-1985	NONE	
US 6263672	B1	24-07-2001	US 6089019 A	18-07-2000
			EP 1144827 A1	17-10-2001
			JP 2002535532 T	22-10-2002
			WO 0042305 A1	20-07-2000